

## ABSTRACT OF THE DISCLOSURE

A target resultant force to be applied to a vehicle body is calculated, the magnitude of a critical friction circle of each wheel is estimated, and a critical resultant force is estimated from the estimated magnitude of the critical friction circle. Subsequently, a ratio of the target resultant force to a critical resultant force is set as an effective road friction, and the magnitude of a tire force is set by using the magnitude of the critical friction circle and the effective road friction. The direction of the tire force of each wheel to be controlled is set based on the sum of products, which are calculated for all other wheels, of a distance from the position of the wheel to be controlled to the position of the other wheel in a direction of the resultant force, and the magnitude of the tire force of the other wheel. Cooperative control of steering and braking or steering and driving of each wheel to be controlled is performed based on the magnitude and direction of the tire force which have been set.